

## Forests and Prairies Division 1999 Iowa Forest Health Report

### **Why worry about our forest health?**

Over 5 percent (2.1 million acres) of Iowa is covered by trees and forests. Our forests have significant impacts on our agricultural-based economy, protection of our drinking water supply, critical for wildlife habitat and overall enjoyment of the place that we call Iowa. Wood industries employ over 7,000 Iowans, producing lumber and high quality wood products. Trees in our small and large communities, our "urban forests," increase property values and conserve cooling and heating energy. Our forests are vital to our state's future.

Because our forest resources are valuable to the citizens of Iowa, the Forestry Division of the Iowa Department of Natural Resources (DNR) began monitoring forest and tree health conditions in the late 1970's. This monitoring effort today is used to determine overall forest and tree health conditions, the status of natural and exotic insect and disease problems, and to provide up-to-date information for private and public managers to aid in the sustained management of Iowa's forest resources.

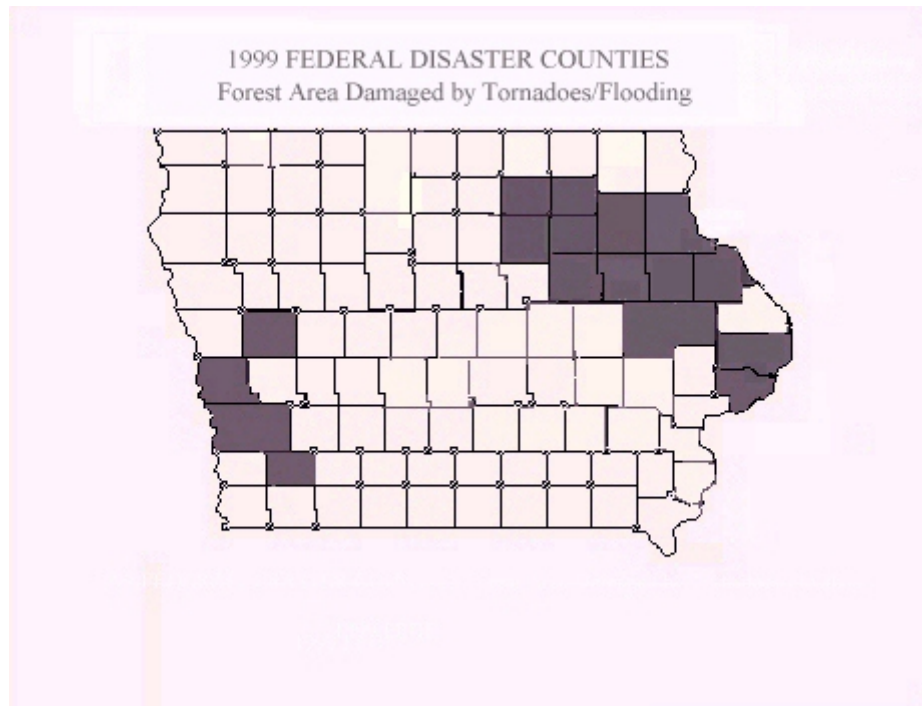
Cooperative monitoring efforts with Iowa State University, Iowa Department of Agriculture and Land Stewardship (IDALS), USDA Forest Service (USFS), USDA Plant Protection Quarantine (PPQ), municipal foresters, and private land owners encourages efficient monitoring efforts. In addition, cooperation fosters improved communications to professionals and others on Iowa's forest resource management issues.

### **Monitoring Efforts for 1999**

Estimates of serious forest and tree insects, diseases, and weather impacts, were determined by aerial surveys of over 136,256 acres of representative forested areas across the state conducted during the summer of 1999. Visual surveys from DNR Foresters, municipal foresters, and trained volunteers were all evaluated in determining forest and tree health conditions and locations of pest problems. The greatest potential threat to our forests is from the famous "Gypsy Moth," (not yet established in our state, but possibly serious in the future) which required placement of 7,468 pheromone survey traps by the IDALS State Entomologist's Office, the USDA, the DNR and trained volunteers to determine infestation areas and sites in need of control efforts.

Efforts to assist vegetation management plans for state park and recreation areas utilized DNR Forestry aerial survey work. State park areas surveyed during 1999 included: Backbone State Park, Desoto Bend National Wildlife Refuge, Dolliver State Park, Effigy Mounds National Monument, Geode State Park, Nine Eagles State Park, Lacey-Keosauqua State Park, Lake Wapello State Park, Waubonsie State Park, Palisades-Kepler State Park, Pikes Peak State Park, Pleasant Creek State Park, Preparation Canyon State Park, viking Lake State Park, Ram Hollow State Preserve, Springbrook State Park, Wapsipincon State Park, White Pine Hollow State Preserve and Wilson Island State Park. In addition, significant areas of forest, such as Loess Hills State Forest, Shimek

State Forest, Stephens State Forests, Yellow River State Forest Ledges State Park, Amana Colonies, and the Iowa River Corridor were aerial surveyed during late July to determine the extent of Oak Wilt, Dutch Elm Disease and the impacts of severe weather events.



## Weather

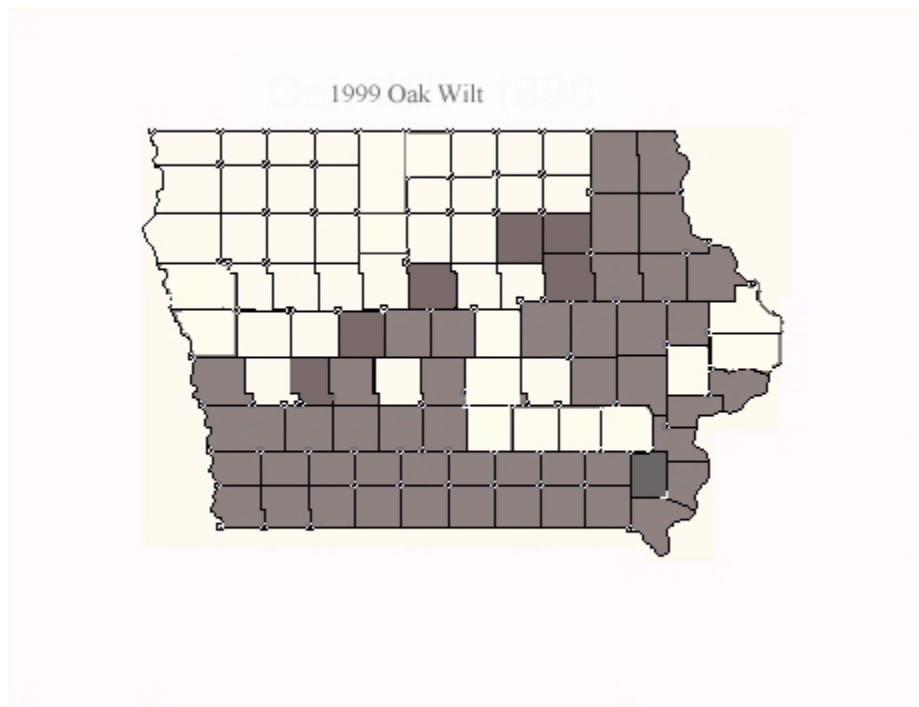
The Winter of 1999 was relatively mild throughout Iowa. Leaf flush occurred mid to late April. There were wide-spread reports in 22 North-Central to East Central counties of incidences of tattered leaves on bur oak *Quercus macrocarpa*, white oak *Quercus alba*, red oak *Quercus rubra*, hackberry *Celtis occidentalis*, green ash *Fraxinus Pennsylvanica* and red-twig dogwood *Cornus* spp. Known as "tatters", it does not appear to cause long term damage-- but reasons for its appearance vary from late spring frosts at leaf emergence to herbicide damage. It is estimated that between 7,000 to 10,000 acres were impacted by severe tatters.

In early May, excessive amounts of Rainfall (events of 8-12 inches in 24 hour time frame) occurred in headwaters of the Cedar, Maquoketa and Wapsipincon Rivers causing widespread flooding in 14 counties of Northeastern Iowa. It is estimated that 15,000 acres of riparian and urban forests were temporarily flooded. Damage to the forest resource was minimal. During June, another 10-12 inch rainfall caused extensive flooding in western portions of Pottawattamie county-including the City of Council Bluffs. Severe weather in the form of tornadoes caused extensive damage 8 central and western Iowa counties. Tree damage for the most part was minimal-except for damage to

windbreaks. In all, severe weather and flooding caused President Clinton to declare 22 Iowa counties federal disaster areas.

### Forest Insects & Diseases

**Oak Wilt**, caused by the fungus *Ceratocystis fagacearum* invades the water-conducting tissues (xylem) of oak trees and causes the foliage to wilt and die. During 1999, oak wilt was reported by DNR foresters on woodlands and urban forests in 63 out of 99 Iowa counties. Aerial surveys estimate 1,719 acres were impacted by new oak wilt infections in 1999. Although all species of oaks are susceptible, the red oak group, especially black oak *Quercus velutina*, red oak *Quercus rubra*, northern pin oak *Quercus ellipsoidalis* and more noticeably in urban areas pin oak *Quercus palustris* often die within weeks of infection. Oak wilt is spread via root grafts and sap-feeding nittidulid beetles. Although there is no cure of oak wilt, control strategies such as preventing tree wounds during high infection periods April 1 to July 1, disease containment by cutting roots of infected trees and killing oak trees surrounding infected trees promptly appear to be effective management options. Sanitation of dying and dead oaks before oak wilt pads or fruiting bodies appear in the following spring reduces risk of overland spread. High valued oaks can be protected through high costs systematic injections. Field reports in central and eastern Iowa counties indicate scattered tree death of white oak *Quercus alba* and bur oak *Quercus macrocarpa* secondary stressors Armillaria root rot *Armillaria spp.* and two-lined chestnut borer *agrilus bilineatus*.

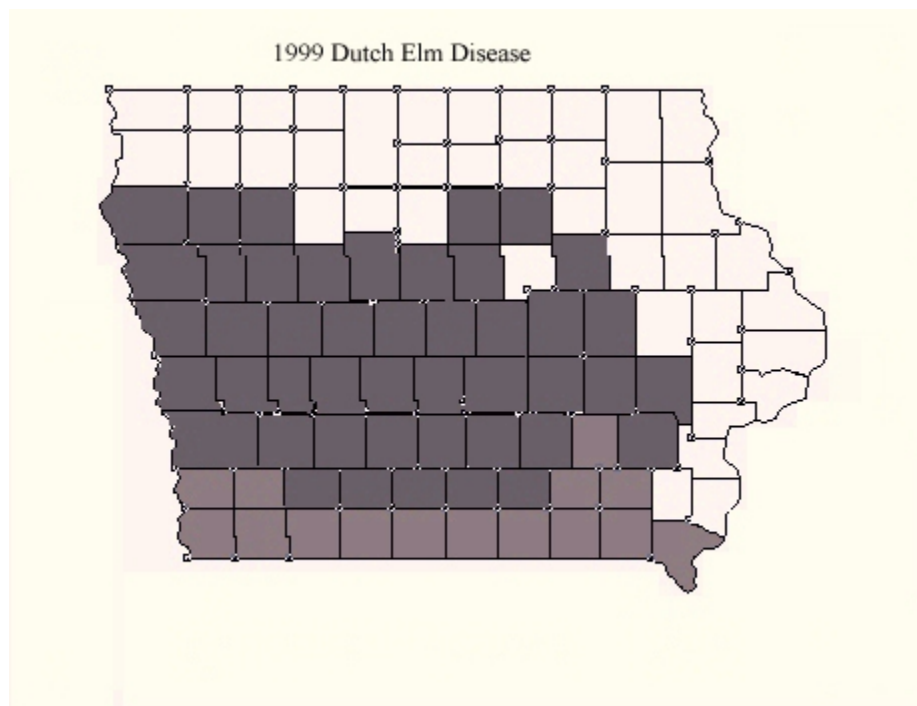


**Dutch elm disease (DED)** caused by the fungus *Ophiostoma umli/novo-ulmi* impacted approximately 465 new acres across the state of American elm *Ulmus americana* and red

elm *Ulmus rubra*. Lack of sanitation of infected trees plus wet-humid springs has increased breeding sites for fungus carrying bark beetles that continues to contribute to new DED tree deaths.

Browsing damage by White-tailed deer *Odocoileus virginianus* impacted over 1,060 acres of newly established forest and Christmas tree plantations in 65 eastern and central Iowa counties according to DNR foresters. Expanded deer hunting seasons combined with cooperative private land owners and hunters are a continued hope to reduce locally large herd sizes to be in more line with habitat.

Non-native Scotch pine *Pinus sylvestris* and Colorado blue spruce *Picea pungens* are the two most widely planted conifers in Iowa for windbreak and ornamental purposes. Scattered plantations and ornamental Scotch pines across Iowa in 1999 suddenly browned and died. Estimates are between 800 to 1,200 acres of mortality caused either by Pine wilt nematode *Bursaphelenchus xylophilus*, southern pine engraver beetle *Ips grandicollis* or a combination of the two. This loss of Scotch pine occurs most often in stagnate and dense plantings, or off site trees between 30-35 years of age on heavy clay soils. Christmas tree plantations in western and southern Iowa reported outbreaks of European Pine Sawfly, impacting approximately 350 acres. Needle blights of brown-spot needle blight *Mycosphaerella dearnessii* and Cyclaneusma needle cast *Cyclaneusma minus* impacted another scattered 400 acres of Scotch pine. Scattered ornamental and windbreak Austrian pine *Pinus nigra* involving approximately 180 acres across the state were observed to have various stages of Dothistroma needle blight *Mycosphaerella pini* and Dipolda tip blight *Sphaeropsis sapinea*. Scattered windbreak and ornamental blue spruce across the state showed signs of Rhizosphaera needle cast *Rhizosphaera kalkhoffii* and Cytospora canker *Cytospora spp.*



Much of western and southern Iowa counties experience wide spread anthracnose *Gnomonia* and *Gloeosporium* on native silver maple *Acer Saccharinum*, green ash *Fraxinus pennsylvanica*, sycamore *Platanus occidentalis*, black walnut *Juglins nigra* and white oak *Quercus alba*. Crabapples *Pyrus spp.* suffered in the southern two thirds of Iowa counties with severe apple scab.

### **Gypsy Moth in Iowa**

The gypsy moth *Lymantria dispar* is a potentially serious exotic defoliator of Iowa's native deciduous trees and shrubs. In 1999, a major treatment for gypsy moth was conducted around the City of McGregor in Clayton county in extreme NE Iowa. A low population treatment area involving 144 acres was conducted by the USDA PPQ in June with pheromone flakes to disrupt adult moth mating. No new male gypsy moths were found in this treatment area in 1999.

Adult male gypsy moth catches in 1999 yielded 135 moths down from 371 caught in 1998. Significant drops in male gypsy moths catches were found in NE Iowa counties during 1999. This drop could be attributed to either the extremely wet spring of 1999 in NE Iowa, or the reduced blow of ballooning larva from neighboring central and southwestern Wisconsin. Infested nursery stock of black hills and blue spruce from the states of Michigan and Pennsylvania increased male gypsy moth catches in urbanizing of

Polk and Dallas counties (Des Moines Metro). A total of 80 of the 135 male gypsy moths caught in Iowa are the result of infested nursery stock. Efforts are underway by the Iowa Department of Agriculture and Lands Stewardship (IDALS) and USDA PPQ to locate spruce outplantings and the 14 nursery sites for treatment in 2000.

